



Oil Tax Reform



Creating a Durable Production Tax
System that is Competitive
for the Long term Benefit of Alaskans

*A presentation to the
Senate Finance Committee*

Feb 28, 2013



Principles of Reform



Tax reform must:

1. Be fair to Alaskans.
2. Encourage new production.
3. Be simple so that it restores balance to the system.
4. Be durable for the long-term.



Challenges in the Current Tax System



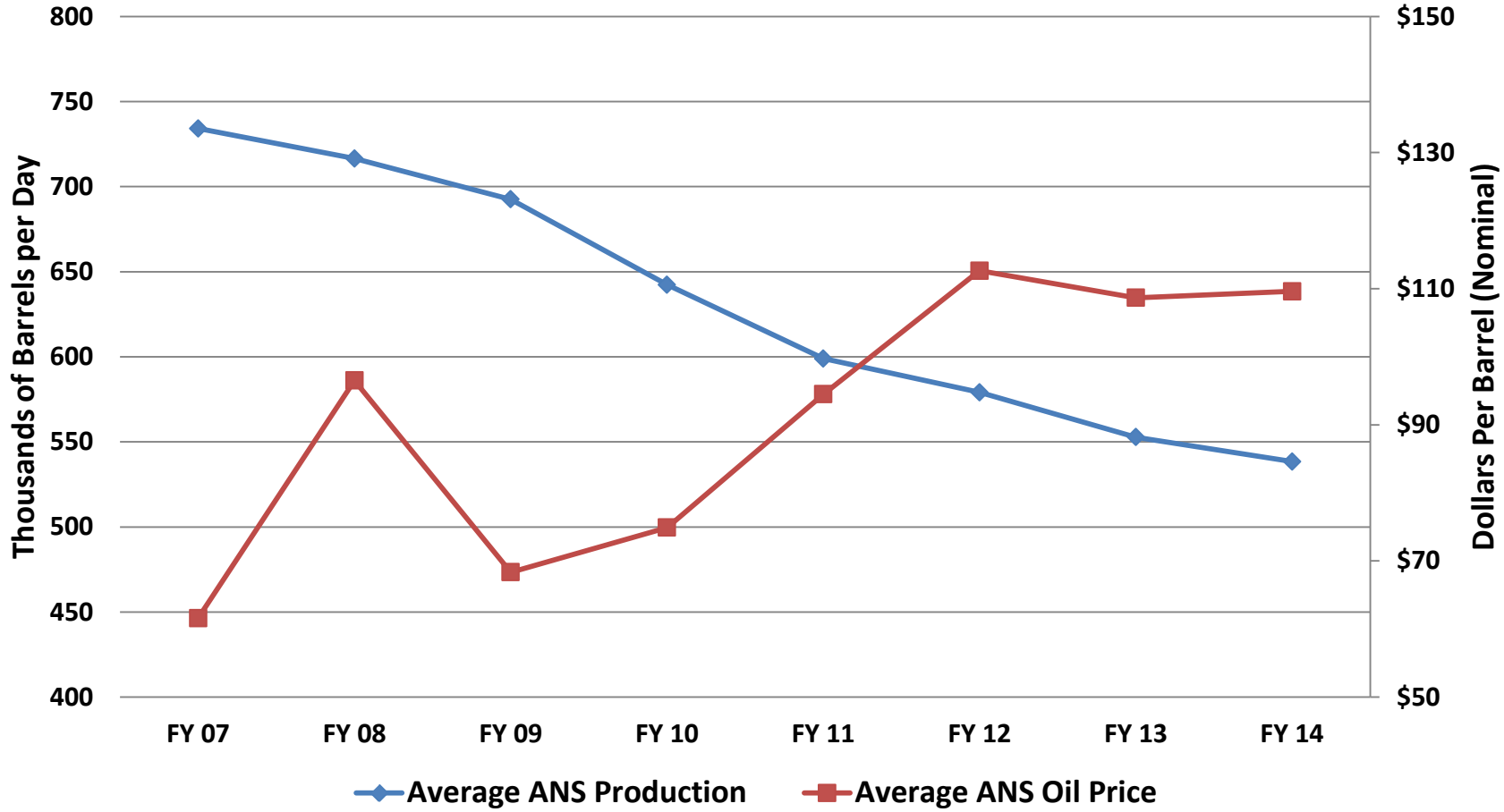
- Declining production.
- Progressivity.
- Tax Credits.



Rising Prices And Declining Production



ANS Average Daily Production and Price





Rising Prices and Declining Production



- Less production = less potential value for both the state and producers.
- In FY 2008 an ANS price of \$96.51 yielded approximately \$20.4 billion in gross value.
- By FY 14, a price that is \$13 higher will yield a bit more than \$3 billion **less** in gross value.

Fiscal Year	Average ANS Oil Price (Dollars per Barrel)	Modeled GVPP (Gross Value at the Point of Production in Billions of Dollars)
2007	\$61.60	\$16
2008	\$96.51	\$20.4
2009	\$68.34	\$13.2
2010	\$74.90	\$13.8
2011	\$94.49	\$16.3
2012	\$112.65	\$18.8
2013	\$108.67	\$17.2
2014	\$109.61	\$17.3



Rising Prices and Declining Production



- Higher prices and lower revenues?
- In FY 2008 an ANS price of \$96.51 yielded approximately \$6.823 billion in production tax.
- By FY 2014, a price that is \$13 higher will yield a bit more than \$3.7 billion in production tax.
- If production was the same as FY 08, revenues in FY 14 would be close to \$6.5 billion or \$2.7 billion higher than forecast.

Fiscal Year	Average ANS Oil Price (Dollars per Barrel)	Production Tax (After Credits in Billions of Dollars)
2007	\$61.60	\$2.208
2008	\$96.51	\$6.823
2009	\$68.34	\$3.112
2010	\$74.90	\$2.871
2011	\$94.49	\$4.553
2012	\$112.65	\$6.146
2013	\$108.67	\$4.353
2014	\$109.61	\$3.779



Rising Prices and Declining Production Observations



1. High prices have generally offset declining production over the past several fiscal years.
2. As production has continued to fall however, the level of production tax generated by high oil prices has fallen.
3. But, the level of production tax revenues have fallen faster than production.
4. The question is why?



Production Tax Liability =

$$[\text{Production Tax Value} * \text{Tax Rate}] - \text{Credits}$$

- Production Tax Value = (Value - Costs)
 - ❑ Value = Volume of Taxable Oil & Gas Produced * Wellhead Value
 - ❑ Costs = Operating Expenditures + Capital Expenditures
- Tax Rate = 25% + 0.4% for every \$1 per barrel that this “net income” exceeds \$30, up to \$92.50, then 0.1%
- Credits = (20% * Capital Expenditures)⁽¹⁾ + (20% * Eligible Transition Expenditures)⁽²⁾ + Small Producer Credit ⁽³⁾

(1) Spread over two years

(2) Limited to those credits earned while the PPT was in effect and could not be used

(3) Credit is for companies producing less than 100,000 bbls/day. Available up to \$12 million for North Slope and/or Cook Inlet Producers, and \$6 million for production outside of North Slope and Cook Inlet annually. Small producer credits cannot be redeemed for cash certificates or carried forward.



The Progressivity Function



- Found in AS 43.55.011 (g)
- Based on the *Production Tax Value* (PTV)
- When the PTV exceeds \$30 per barrel of oil equivalent (BOE) the tax is levied at:
 - .4% per dollar until the PTV/bbl = \$92.50
 - .1% per dollar that the PTV/bbl is greater than \$92.50
 - Maximum rate of 50% (in addition to 25% base tax)
- Calculated monthly
- A single statewide calculation on all oil and gas



Progressivity: How it is Calculated.



- Based on page 108 of the 2012 Fall Revenue Sources Book.
- Taxable Production: 170,262,000
- *GVPP = Gross Value at the Point of Production.*
- *PTV = Production Tax Value.*

ANS West Coast Price:	\$109.61
Transportation Costs:	-\$8.81
GVPP:	\$100.80
Deductible Lease Expend:	
Operating:	-\$16.32
Capital:	-\$19.61
Production Tax Value (PTV):	\$64.87
Base Tax (25%):	\$16.22



Progressivity: How it is Calculated.



Calculating the Progressivity with a PTV/bbl = \$64.87

- $\$64.87 - \$30 = \$34.87$
- Because the PTV/bbl < \$92.50
- $\$34.87 \times .004 \approx 13.95\%$

The 13.95% progressive tax is then applied to the PTV/bbl of \$64.87 not to the \$34.87

$\$64.87 \times 13.95\% = \9.05 per barrel

Therefore: the \$9.05 progressive tax + \$16.22 (25%) base tax = \$25.27 production tax per barrel **before credits**.

Multiplied by the taxable production (170,262,000 bbls) = \$4,302 million



Observations



- Progressivity increases the overall tax rate as the overall profitability (before state and federal income taxes) rises.
- Remember, progressivity is company specific and each company will have a different exposure because progressivity is sensitive to:
 - The oil price.
 - Spending.
 - Production.
- Progressivity is only one part of what makes the overall system progressive; it is not a factor at low oil prices.



Example 1: New Capital Spending in Fiscal Year 2014



- Based on page 108 of the 2012 Fall Revenue Sources Book.
- Taxable Production: 170,262,000.
- Increased capital spending by \$500 million from \$3,338.6 million to \$3,836.6 million.
- CAPEX per barrel goes from \$19.61 to \$22.55 per barrel.

ANS West Coast Price:	\$109.61
Transportation Costs:	-\$8.81
GVPP:	\$100.80
Deductible Lease Expend:	
Operating:	-\$16.32
Capital:	-\$22.55
Production Tax Value (PTV):	\$61.93
Base Tax (25%):	\$15.48

Example 1: New Capital Spending in Fiscal Year 2014



Calculating the Progressivity with a PTV/bbl = \$61.93

- $\$61.93 - \$30 = \$31.93$
- Because the PTV/bbl $< \$92.50$
- $\$31.93 \times .004 \approx 12.77\%$

The 12.77% progressive tax is then applied to the PTV/bbl of \$61.93 **not** to the \$31.93

$\$61.93 \times 12.77\% = \7.91 per barrel

Therefore: the \$7.91 progressive tax + \$15.48 (25%) base tax = \$23.39 production tax per barrel **before credits**.

Multiplied by the taxable production (170,262,000) = \$3,983 million

Therefore – capital spending **went up \$500 million** and state revenues **went down \$319 million** before considering the credits.



Observations



- Progressivity based on the net production tax incentivizes spending.
- The level of the incentive depends on the price of oil and the cost structure of the investor **not** the project's economics.
- The value of the deduction often exceeds the value of the tax credits.
- This benefit is **only** available to incumbent producers and doesn't create a level playing field with new entrants.



Example 2: New Capital Spending in Fiscal Year 2014 with lower oil price



- Based on page 108 of the 2012 Fall Revenue Sources Book.
- Taxable Production: 170,262,000.
- Oil Prices decline \$10 to \$99.61
- Increased capital spending by \$500 million from \$3,338.6 million to \$3,836.6 million
- CAPEX per barrel goes from \$19.61 to \$22.55 per barrel.

ANS West Coast Price:	\$99.61
Transportation Costs:	-\$8.81
GVPP:	\$90.80
Deductible Lease Expend:	
Operating:	-\$16.32
Capital:	-\$22.55
Production Tax Value (PTV):	\$51.93
Base Tax (25%):	\$12.98

Example 2: New Capital Spending in Fiscal Year 2014 with lower oil price



Calculating the Progressivity with a PTV/bbl = \$51.93

- $\$51.93 - \$30 = \$21.93$
- Because the PTV/bbl < \$92.50
- $\$21.93 \times .004 \approx 8.77\%$

$\$51.93 \times 8.77\% = \4.56 per barrel

Therefore: the \$4.56 progressive tax + \$12.98 (25%) base tax = \$17.54 production tax per barrel **before credits.**

Multiplied by the taxable production (170,262,000) = \$2,986 million

The same equation run **without** the additional capital spending (Capital at \$19.61 / bbl) derives \$3,265 million.

Therefore the benefit of the deduction of an additional \$500 million in capital spending at an oil price of \$109.61 was **\$319 million** but at an oil price of \$99.61 was **\$279 million.**



Observations



- Since the value of a deduction is dependent on the price of oil it is very difficult for a company to predict the value of the deduction especially with long lead time projects.
- The reduction in taxes is temporary, since as soon as the spending is done the tax rate rises back to the higher rate.
- Greater incentive to spend at higher prices than at lower prices – the opposite of what is needed to make projects economic.



Example 3: Cutting Costs

- Again, based on page 108 of the 2012 Fall Revenue Sources Book.
- Taxable Oil Production: 170,262,000
- Reduce the capital cost per barrel by \$5.

ANS West Coast Price:	\$109.61
Transportation Costs:	-\$8.81
GVPP:	\$100.80
Deductible Lease Expend:	
Operating:	-\$16.32
Capital:	-\$14.61
Production Tax Value (PTV):	\$69.87
Base Tax (25%):	\$17.47



Example 3: Cutting Costs



Calculating the Progressivity with a PTV/bbl = \$69.87

- $\$69.87 - \$30 = \$39.87$
- Because the PTV/bbl $< \$92.50$
- $\$39.87 \times .004 \approx 15.95\%$

$\$69.87 \times 15.95\% = \11.14 per barrel

Therefore: the \$11.14 progressive tax + \$17.47 (25%) base tax = \$28.61 production tax per barrel **before credits**.

Before the cost savings, taxes per barrel were \$25.27

Therefore a reduction in capital cost per barrel of \$5 leads to a tax increase of \$3.34 per barrel.

With progressivity, producer keeps \$1.66 of the \$5 in cost savings ($\$5 - \3.34); without progressivity, producer keeps \$3.75 of the \$5 in cost savings ($\$5 - \1.25)



Observations



- When cutting costs increases taxes it creates distortions in decision making and behavior.
- Technology that improves economic value will create the same effect as cutting costs because it increases the production tax value and therefore, the progressive tax rate.
- Similarly, things that reduce the production tax value reduce the tax rate.
- Much stronger incentive to keep costs under control without progressivity – good for both producer and state.

FY 09 Monthly Tax Calculations – Monthly Oil Price Volatility Matters!



	July	August	September	October	November	December	
Oil Price	\$132.87	\$115.98	\$101.86	\$73.65	\$53.94	\$37.70	
Total barrels per month	20,174,640	17,230,458	21,197,405	23,080,737	22,846,738	22,727,030	
Royalty & Federal barrels	2,848,947	2,848,947	2,848,947	2,848,947	2,848,947	2,848,947	
Taxable barrels per month	17,325,693	14,381,511	18,348,458	20,231,790	19,997,791	19,878,083	
Wellhead value	\$126.37	\$109.48	\$95.36	\$67.15	\$47.44	\$31.20	
Gross value of taxable bbls	\$2,189,447,867	\$1,574,487,850	\$1,749,708,987	\$1,358,564,721	\$948,695,216	\$620,196,200	
Deductible Opex	\$170,833,333	\$170,833,333	\$170,833,333	\$170,833,333	\$170,833,333	\$170,833,333	
Deductible Capex	\$145,833,333	\$145,833,333	\$145,833,333	\$145,833,333	\$145,833,333	\$145,833,333	
Taxable value	\$1,872,781,200	\$1,257,821,183	\$1,433,042,320	\$1,041,898,054	\$632,028,549	\$303,529,533	
Base rate	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	
Base tax	\$468,195,300	\$314,455,296	\$358,260,580	\$260,474,514	\$158,007,137	\$75,882,383	
Taxable value per barrel	\$108.09	\$87.46	\$78.10	\$51.50	\$31.60	\$15.27	
Progressive tax rate	26.6%	23.0%	19.2%	8.6%	0.6%	-	
Progressive tax	\$497,397,040	\$289,102,592	\$275,726,004	\$89,595,168	\$4,057,416	\$0	
Tax before credits	\$965,592,340	\$603,557,888	\$633,986,584	\$350,069,682	\$162,064,553	\$75,882,383	
Credits applied	\$29,150,000	\$29,150,000	\$29,150,000	\$29,150,000	\$29,150,000	\$29,150,000	
Tax after credits	\$936,442,340	\$574,407,888	\$604,836,584	\$320,919,682	\$132,914,553	\$46,732,383	
Effective tax rate on net	50%	46%	42%	31%	21%	15%	
	January	February	March	April	May	June	Total
Oil Price	\$39.01	\$42.78	\$47.75	\$46.56	\$58.23	\$69.80	\$68.34
Total barrels per month	21,812,241	20,747,934	23,020,348	20,160,047	22,186,732	17,785,719	252,970,029
Royalty & Federal barrels	2,848,947	2,848,947	2,848,947	2,848,947	2,848,947	2,848,947	34,187,360
Taxable barrels per month	18,963,294	17,898,987	20,171,402	17,311,100	19,337,785	14,936,772	218,782,669
Wellhead value	\$32.51	\$36.28	\$41.25	\$40.06	\$51.73	\$63.30	\$61.84
Gross value of taxable bbls	\$616,496,702	\$649,375,248	\$832,070,320	\$693,482,668	\$1,000,343,635	\$945,497,689	\$13,178,367,102
Deductible Opex	\$170,833,333	\$170,833,333	\$170,833,333	\$170,833,333	\$170,833,333	\$170,833,333	\$2,050,000,000
Deductible Capex	\$145,833,333	\$145,833,333	\$145,833,333	\$145,833,333	\$145,833,333	\$145,833,333	\$1,750,000,000
Taxable value	\$299,830,035	\$332,708,581	\$515,403,653	\$376,816,001	\$683,676,969	\$628,831,022	\$9,378,367,102
Base rate	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Base tax	\$74,957,509	\$83,177,145	\$128,850,913	\$94,204,000	\$170,919,242	\$157,207,756	\$2,344,591,775
Taxable value per barrel	\$15.81	\$18.59	\$25.55	\$21.77	\$35.35	\$42.10	\$44.27
Progressive tax rate	-	-	-	-	2.1%	4.8%	7.1%
Progressive tax	\$0	\$0	\$0	\$0	\$14,642,885	\$30,434,227	\$1,200,955,332
Tax before credits	\$74,957,509	\$83,177,145	\$128,850,913	\$94,204,000	\$185,562,128	\$187,641,982	\$3,545,547,108
Credits applied	\$29,150,000	\$29,150,000	\$29,150,000	\$29,150,000	\$29,150,000	\$29,150,000	\$349,800,000
Tax after credits	\$45,807,509	\$54,027,145	\$99,700,913	\$65,054,000	\$156,412,128	\$158,491,982	\$3,195,747,108
Effective tax rate on net	15%	16%	19%	17%	23%	25%	34%
						Less adjustments	\$83,792,561
						TOTAL TAX	\$3,111,954,547

Source: Department of Revenue from production tax monthly information forms, annual returns, and company forecasts



Summary



- Progressivity is not simple:
 - It reduces the cash margin per barrel in ways that leaves Alaska uncompetitive.
 - It is highly sensitive to price, production, and spending—making it difficult to predict for the State of Alaska and taxpayers.
 - It incentivizes spending—but not necessarily investments that lead to production.
 - It mutes the incentive to save costs or utilize technology.
 - It creates the decoupling dilemma.



Production Tax Credits Used and Forecast



\$1,200

by Fiscal Year
(\$ millions)

\$1,000

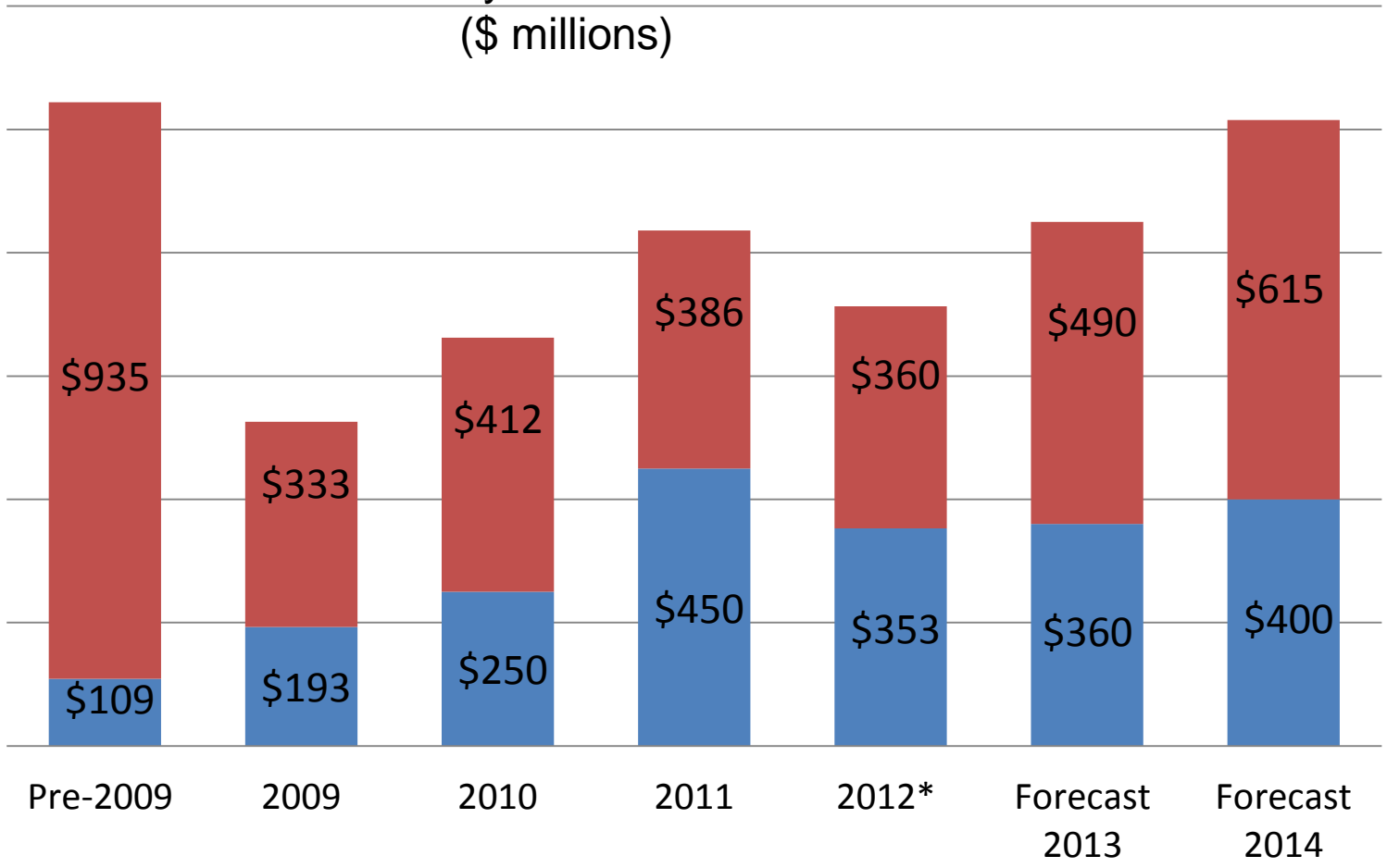
\$800

\$600

\$400

\$200

\$-



■ Tax Credit Certificates Refunded ■ Credits Applied Against Production Tax Liability

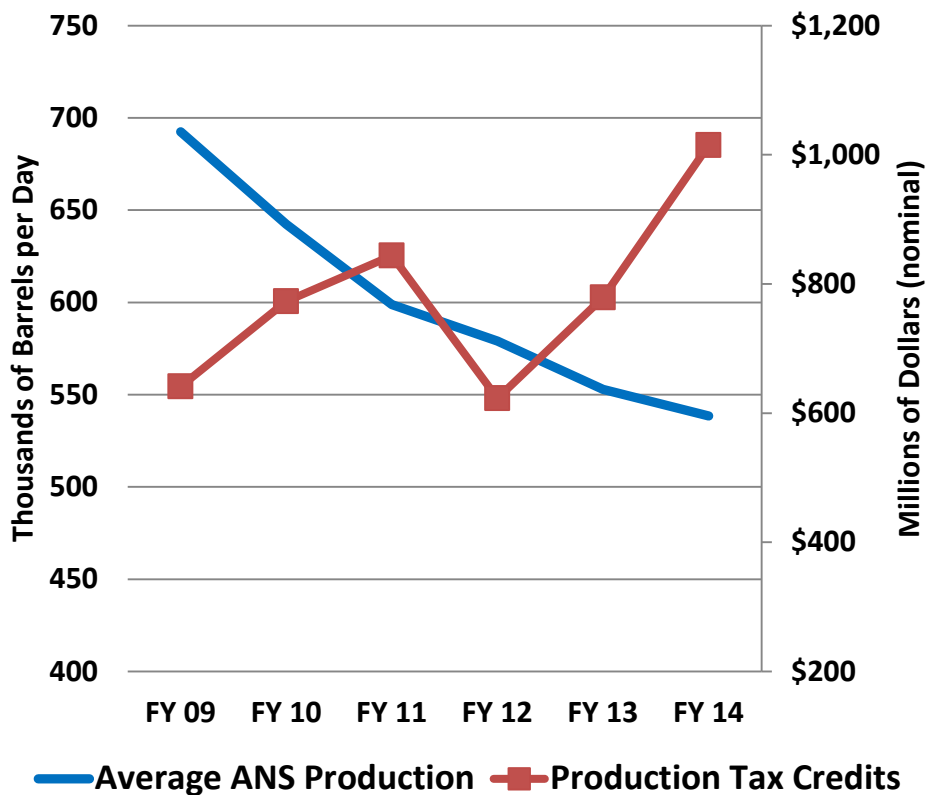
*Estimated pending final true-ups
Source: Alaska Department of Revenue



Production Tax Credits



Average ANS Production and Tax Production Tax Credits



- Production tax credits have increased while production continues to decline.
- The North Slope needs significant additional investment for new production.
- Additional investment will increase the credit liability to the state and reduce revenues.



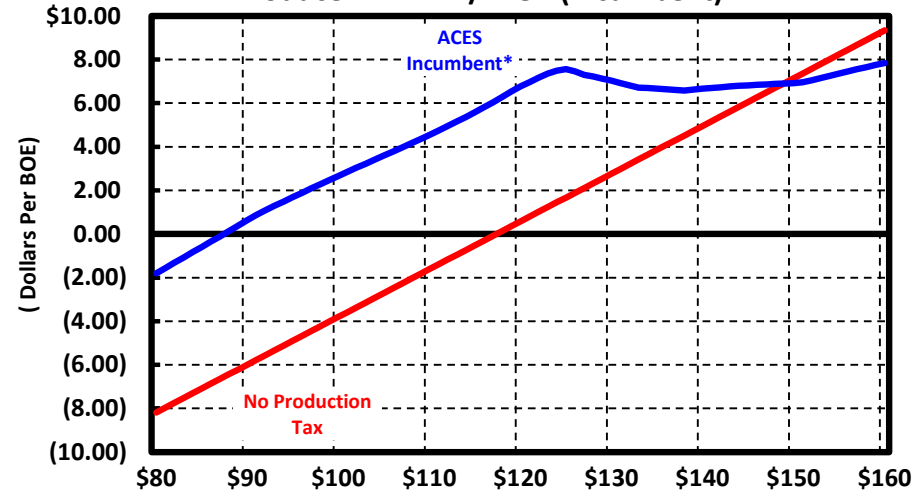
Production Tax Revenue Sensitivity



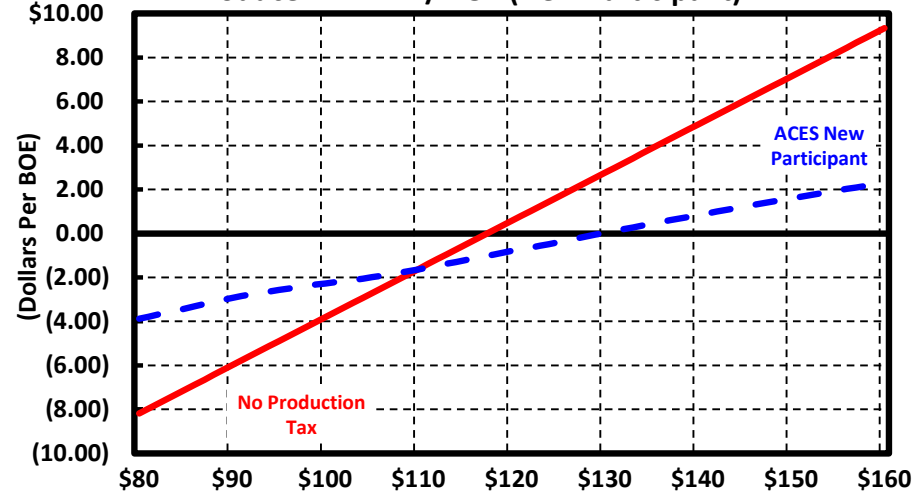
- Rising prices + Declining production can equal lower revenue, considering...
- Alaska's current production tax revenues depend on:
 - Price
 - Production
 - Company Spending
- Tax credits depend on spending.
- Creates potential scenario where low prices coupled with high spending create significant revenue shortfalls for the state.
- Regardless of price, increased investment will lead to near term revenue shortfalls for the state.

The Economics of High Cost Light Oil Development

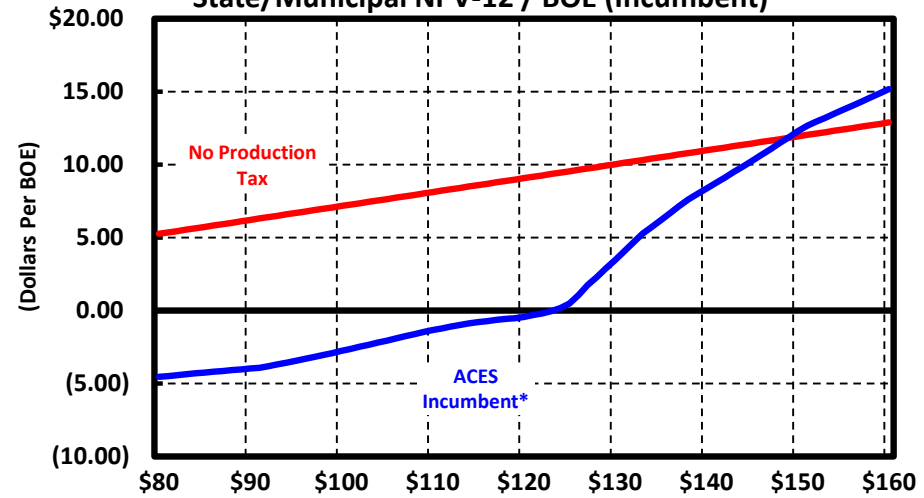
Producer NPV-12 / BOE (Incumbent)



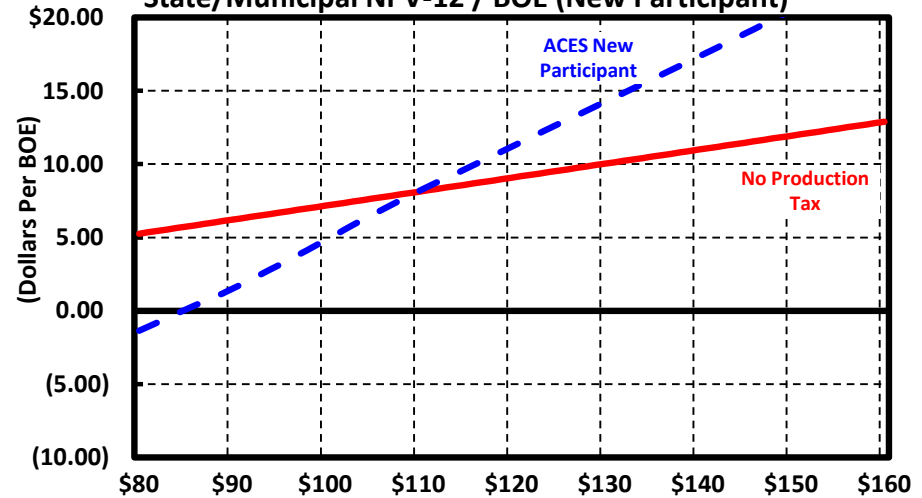
Producer NPV-12 / BOE (New Participant)



State/Municipal NPV-12 / BOE (Incumbent)



State/Municipal NPV-12 / BOE (New Participant)



* Analysis of incumbent production includes "buy-down" impact for reduced taxes on existing production.



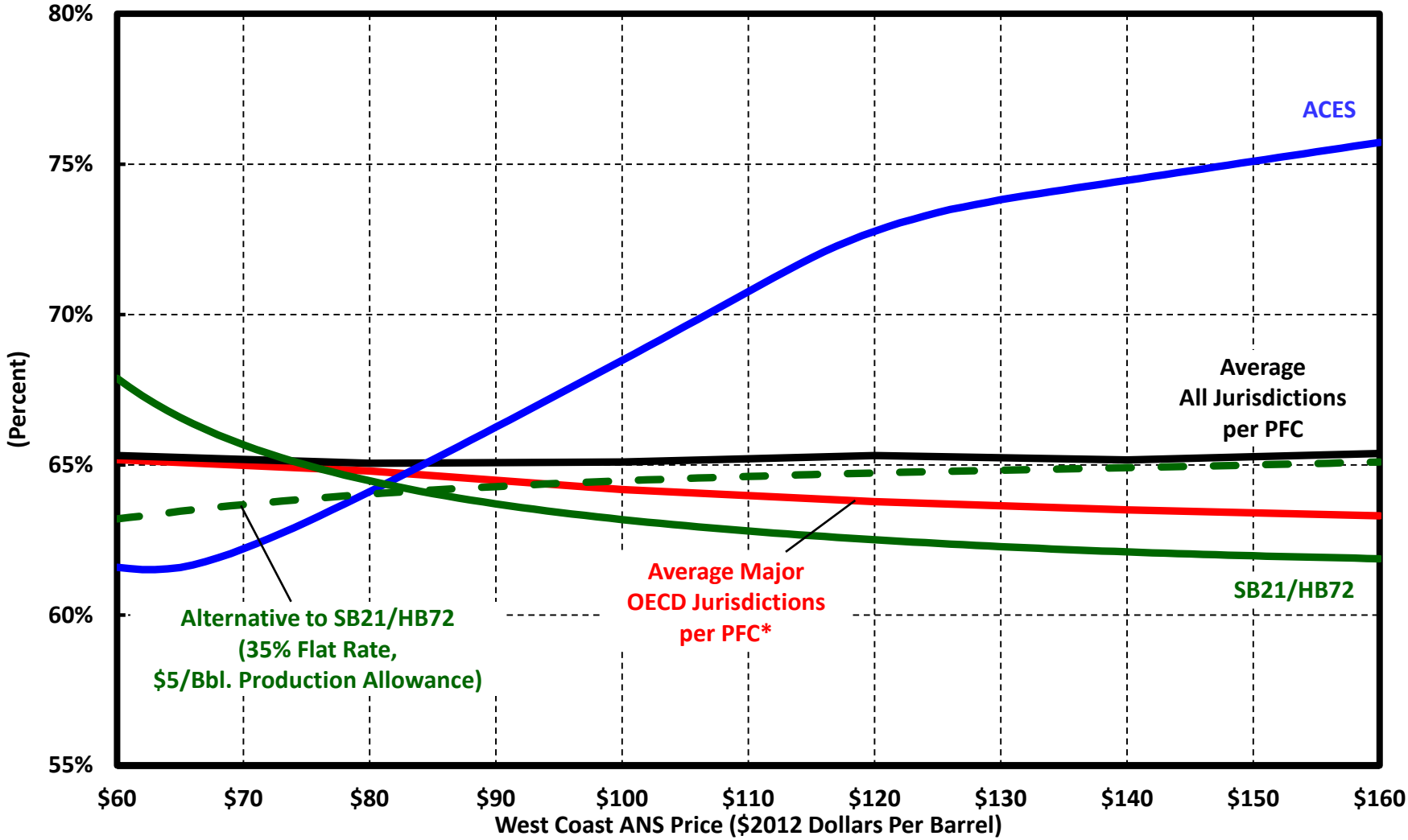
Senate Bill 21 and CS SB 21 (RES)

Primary Provisions



Provision	Current Tax System	SB 21	CS SB 21 Resources
Base Tax Rate	25%	25%	35%
Progressivity	Yes	No	No
Qualified Capital Credits	Yes, 20% of qualified capital spending.	No	No
Loss Carry Forward Credits	Yes, 25% of annual loss (transferred or state purchases)	Yes, 25% of annual loss (carried to production)	Yes, 35% of annual loss (carried to production)
Gross Revenue Exclusion	No	20% of GVPP, Units formed after Jan. 1, 2003 or new participating areas.	30% of GVPP, Units formed after Jan. 1, 2003, new participating areas, or expansion of existing participating areas.
Per Barrel Credit	No	No	\$5 per taxable barrel (applicable against tax liability only)

Average Government Take ACES v. SB21/HB72 and Alternative to SB21/HB72 for All Existing Producers (FY2015-FY2019) and Other Jurisdictions



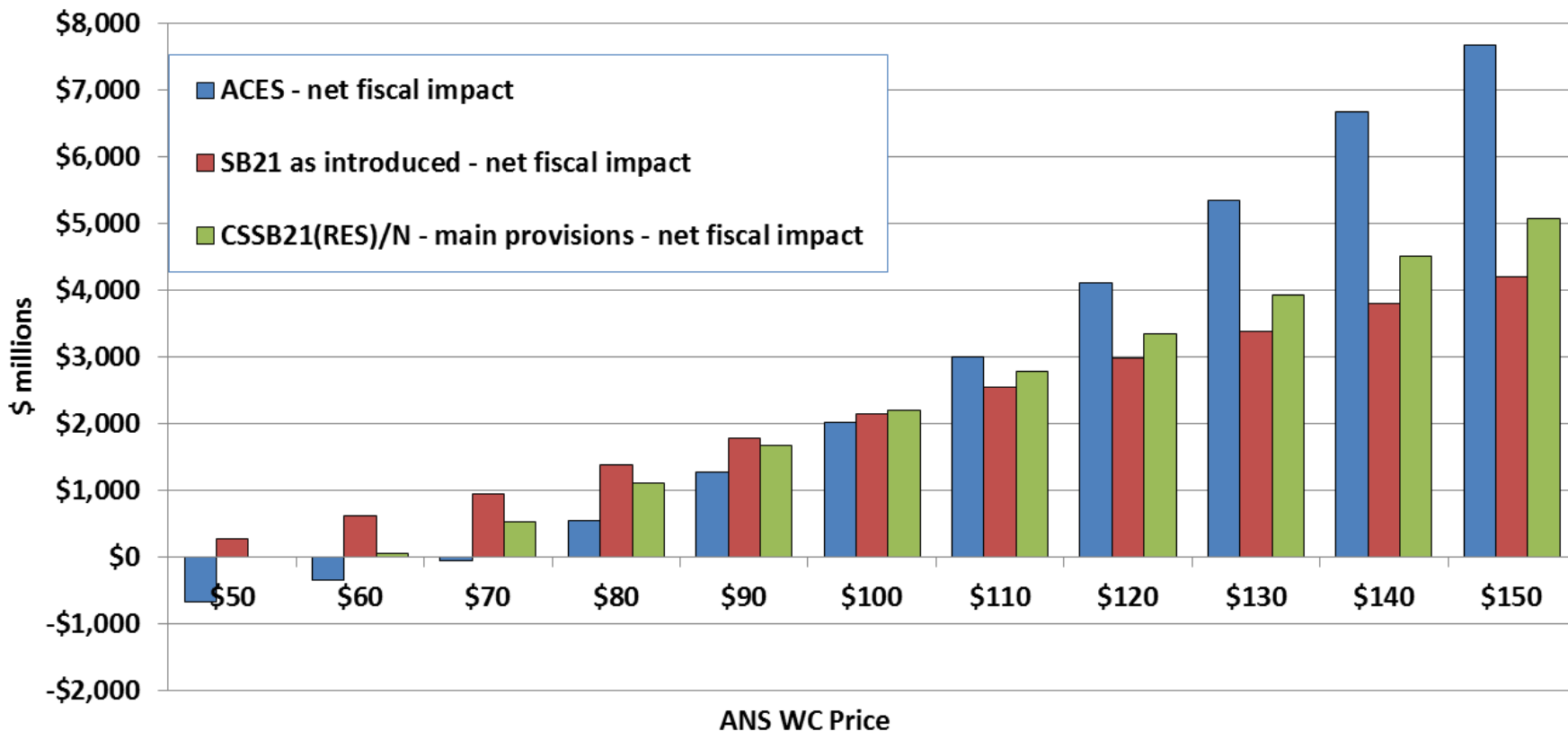
* Australia, Canada (Alberta Conventional), Norway, United Kingdom and United States.



Production Tax Revenue, less refunded and carried-forward credits



**FY15 ACES, SB21 and CSSB21(RES) -
Production Tax Revenue with certain adjustments**



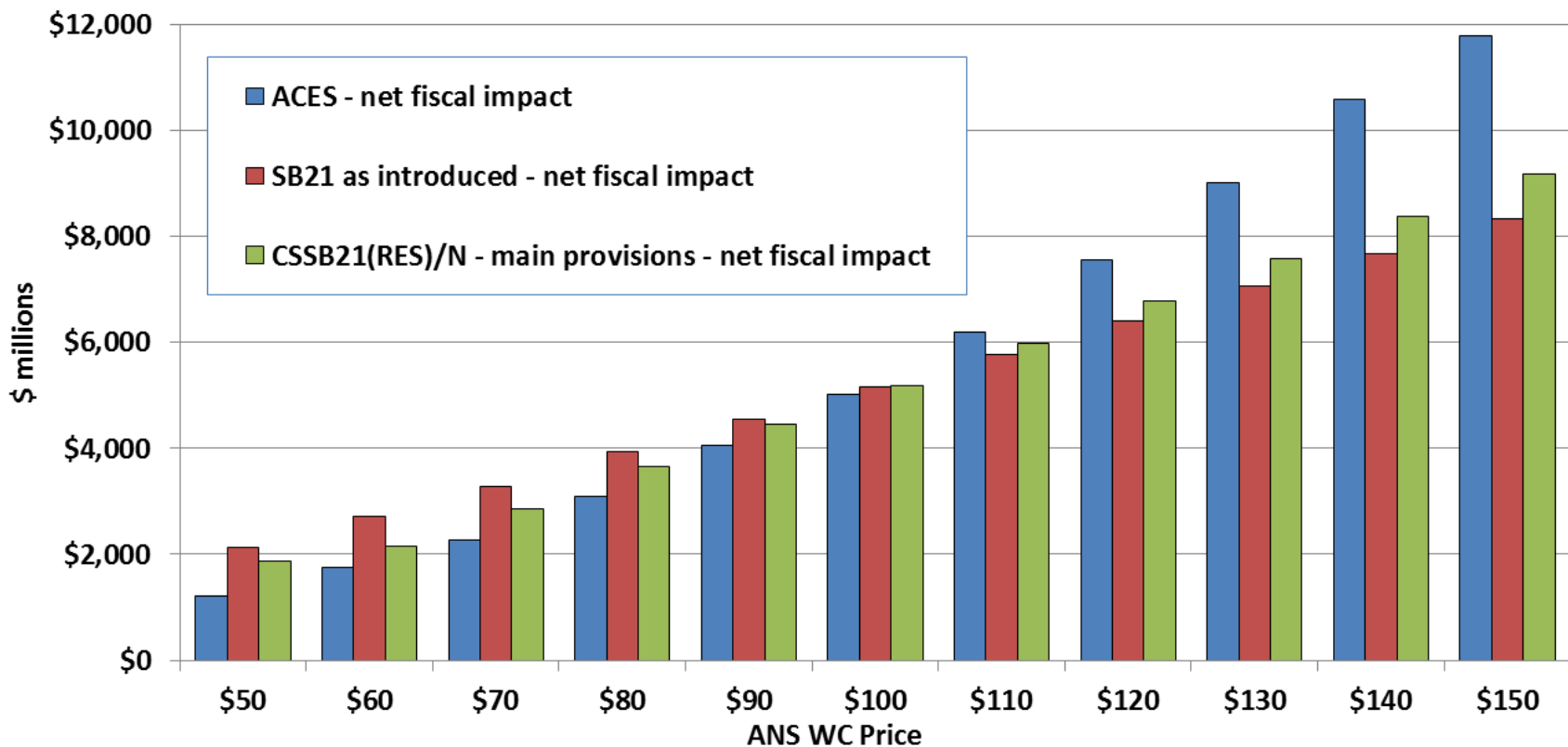
Source: Fall 2012 forecast model modified for SB21 and CSSB21. Note, "Net fiscal impact" includes forecast revenue, less expected North Slope credit payments. For \$50, also includes expected liability for carried forward credits in excess tax liability for major producers. CSSB21(RES)/N "Main Provisions" does not include impact of new service industry CIT credit, or expansion of exploration credit.



General Fund Unrestricted Revenue, less refunded and carried-forward credits



**FY15 ACES, SB21 and CSSB21(RES) -
GF Unrestricted Revenue with certain adjustments**



Source: Fall 2012 forecast model modified for SB21 and CSSB21. Note, "Net fiscal impact" includes forecast revenue, less expected North Slope credit payments. For \$50, also includes expected liability for carried forward credits in excess tax liability for major producers. CSSB21(RES)/N "Main Provisions" does not include impact of new service industry CIT credit, or expansion of exploration credit.



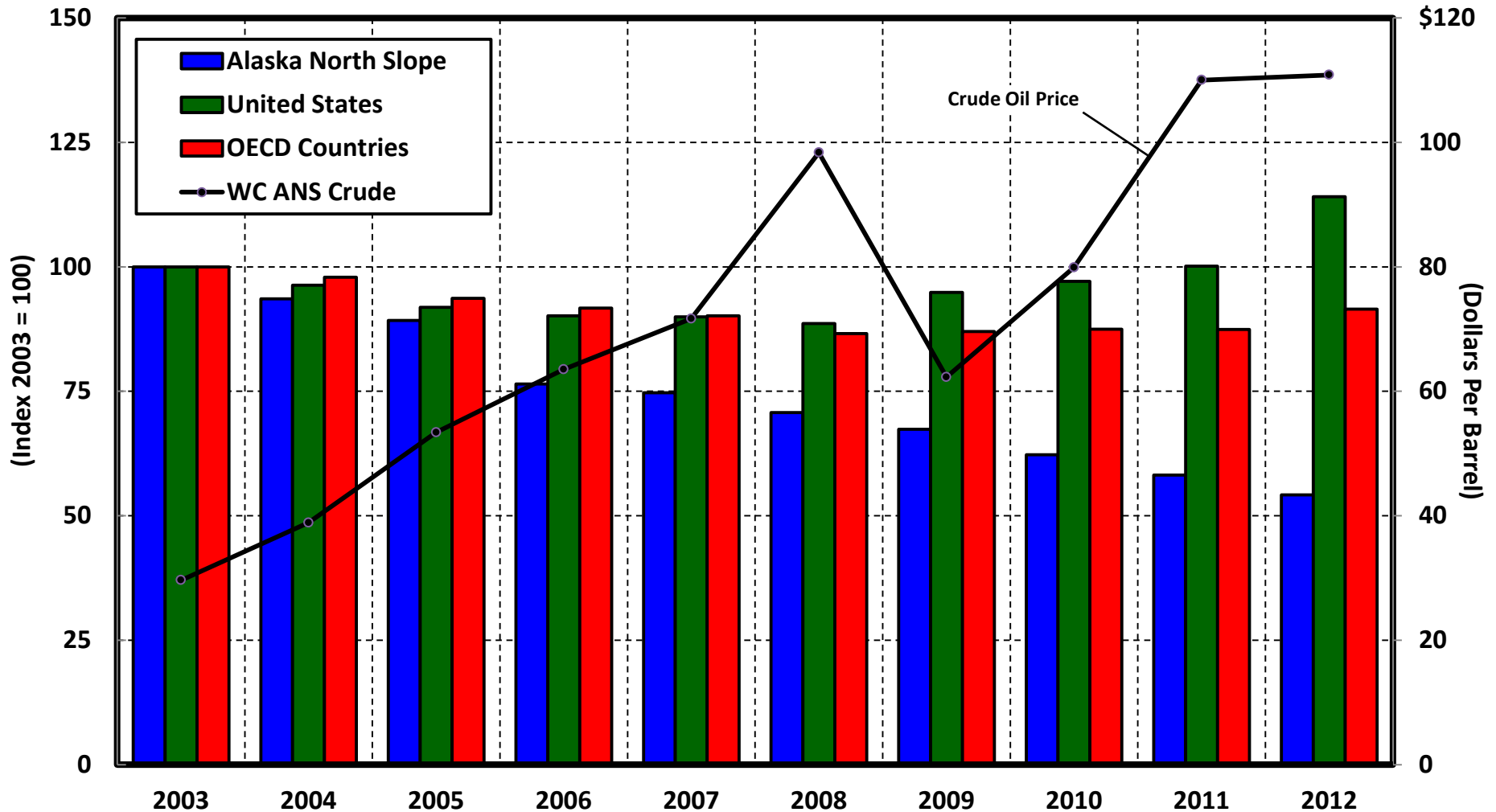
Supplemental Slides

The following slides were presented by EconOne to the Senate Resources Committee on February 13, 2013

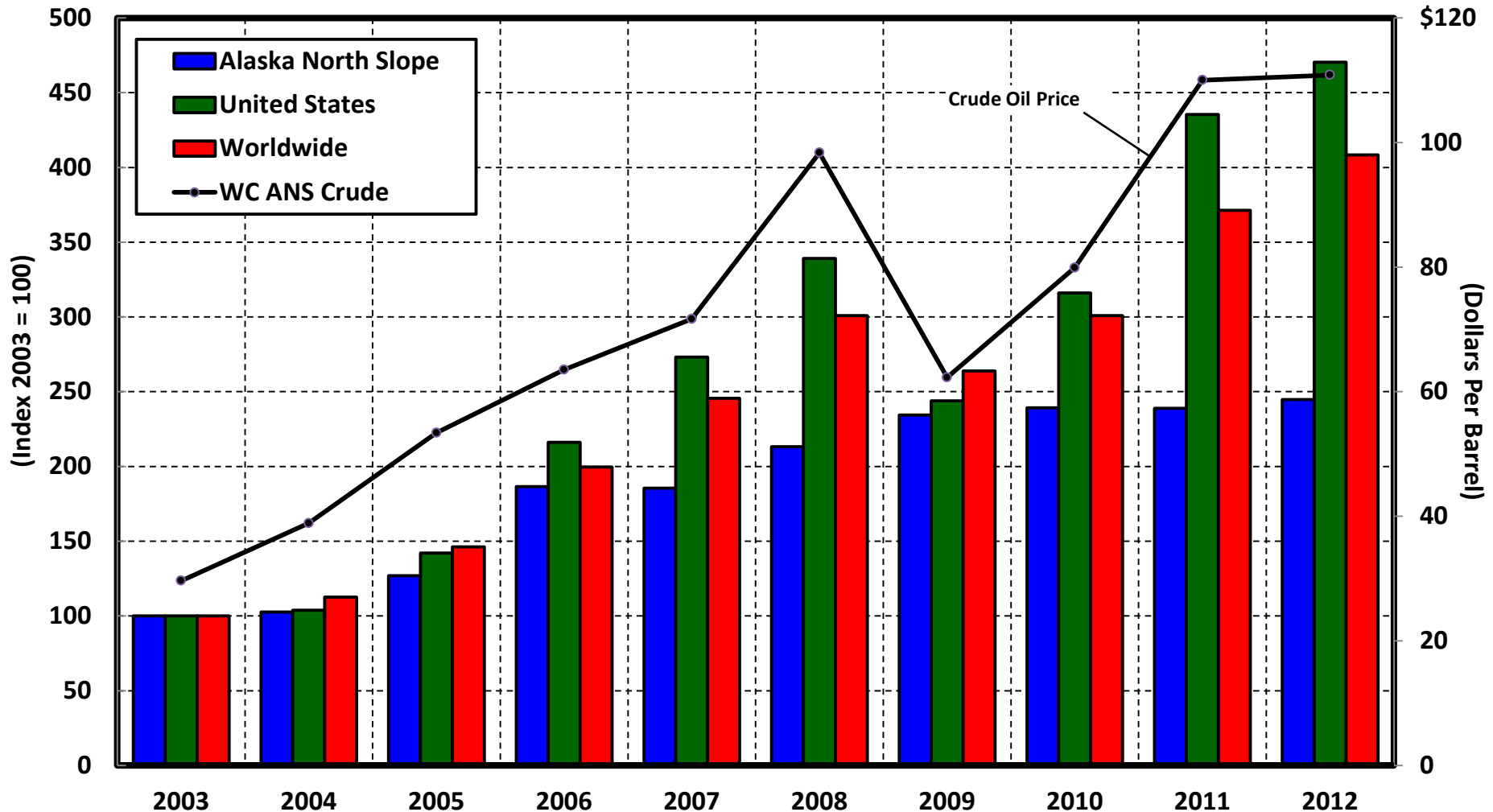
Crude Oil Production

Alaska North Slope vs. United States and OECD Countries

2003 - 2012



Estimated Capital Spending for Exploration and Development Alaska North Slope vs. United States and Worldwide Spending* 2003 - 2012



* North Slope based on tax return information; U.S. based on top 50 public companies; worldwide based on top 75 public companies

Calculation of ACES Tax: Varying Prices

Annual Taxable Production (Bbls)		50,000,000	50,000,000	50,000,000
West Coast ANS Price (\$/Bbl)		\$80.00	\$100.00	\$120.00
Transportation Costs (\$/Bbl)	-	10.00	10.00	10.00
Wellhead Value (\$/Bbl)	=	\$70.00	\$90.00	\$110.00
Operating Costs (\$/Bbl)	-	\$15.00	\$15.00	\$15.00
Capital Expenditures (\$/Bbl)	-	15.00	15.00	15.00
Taxable Value (\$/Bbl)	=	\$40.00	\$60.00	\$80.00
ACES Base Tax Rate (%)		25.0%	25.0%	25.0%
ACES Progressive Tax (%)	+	4.0%	12.0%	20.0%
Total Tax Rate (%)	=	29.0%	37.0%	45.0%
Total Wellhead Value (\$)		\$3,500,000,000	\$4,500,000,000	\$5,500,000,000
Operating Expenditures (\$)	-	750,000,000	750,000,000	750,000,000
Capital Expenditures (\$)	-	750,000,000	750,000,000	750,000,000
Production Tax Value (\$)	=	\$2,000,000,000	\$3,000,000,000	\$4,000,000,000
Production Tax Before Credits (PTV x Total Tax Rate) (\$)		\$580,000,000	\$1,110,000,000	\$1,800,000,000
Capital Credits (20% x Capital Expenditures) (\$)	-	150,000,000	150,000,000	150,000,000
Production Tax After Credits (\$)	=	\$430,000,000	\$960,000,000	\$1,650,000,000
Effective Tax Rate After Credits (%)		21.5%	32.0%	41.3%

Calculation of ACES Tax: Varying Costs

\$100 West Coast ANS Price

Annual Taxable Production (Bbls)		50,000,000	50,000,000	50,000,000
West Coast ANS Price (\$/Bbl)		\$100.00	\$100.00	\$100.00
Transportation Costs (\$/Bbl)	-	10.00	10.00	10.00
Wellhead Value (\$/Bbl)	=	\$90.00	\$90.00	\$90.00
Operating Costs (\$/Bbl)	-	\$10.00	\$20.00	\$30.00
Capital Expenditures (\$/Bbl)	-	10.00	15.00	20.00
Taxable Value (\$/Bbl)	=	\$70.00	\$55.00	\$40.00
ACES Base Tax Rate (%)		25.0%	25.0%	25.0%
ACES Progressive Tax (%)	+	16.0%	10.0%	4.0%
Total Tax Rate (%)	=	41.0%	35.0%	29.0%
Total Wellhead Value (\$)		\$4,500,000,000	\$4,500,000,000	\$4,500,000,000
Operating Expenditures (\$)	-	500,000,000	1,000,000,000	1,500,000,000
Capital Expenditures (\$)	-	500,000,000	750,000,000	1,000,000,000
Production Tax Value (\$)	=	\$3,500,000,000	\$2,750,000,000	\$2,000,000,000
Production Tax Before Credits (PTV x Total Tax Rate) (\$)		\$1,435,000,000	\$962,500,000	\$580,000,000
Capital Credits (20% x Capital Expenditures) (\$)	-	100,000,000	150,000,000	200,000,000
Production Tax After Credits (\$)	=	\$1,335,000,000	\$812,500,000	\$380,000,000
Effective Tax Rate After Credits (%)		38.1%	29.5%	19.0%

Calculation of ACES Tax: Varying Costs

\$80 West Coast ANS Price

Annual Taxable Production (Bbls)		50,000,000	50,000,000	50,000,000
West Coast ANS Price (\$/Bbl)		\$80.00	\$80.00	\$80.00
Transportation Costs (\$/Bbl)	-	10.00	10.00	10.00
Wellhead Value (\$/Bbl)	=	\$70.00	\$70.00	\$70.00
Operating Costs (\$/Bbl)	-	\$10.00	\$20.00	\$30.00
Capital Expenditures (\$/Bbl)	-	10.00	15.00	20.00
Taxable Value (\$/Bbl)	=	\$50.00	\$35.00	\$20.00
ACES Base Tax Rate (%)		25.0%	25.0%	25.0%
ACES Progressive Tax (%)	+	8.0%	2.0%	0.0%
Total Tax Rate (%)	=	33.0%	27.0%	25.0%
Total Wellhead Value (\$)		\$3,500,000,000	\$3,500,000,000	\$3,500,000,000
Operating Expenditures (\$)	-	500,000,000	1,000,000,000	1,500,000,000
Capital Expenditures (\$)	-	500,000,000	750,000,000	1,000,000,000
Production Tax Value (\$)	=	\$2,500,000,000	\$1,750,000,000	\$1,000,000,000
Production Tax Before Credits (PTV x Total Tax Rate) (\$)		\$825,000,000	\$472,500,000	\$250,000,000
Capital Credits (20% x Capital Expenditures) (\$)	-	100,000,000	150,000,000	200,000,000
Production Tax After Credits (\$)	=	\$725,000,000	\$322,500,000	\$50,000,000
Effective Tax Rate After Credits (%)		29.0%	18.4%	5.0%

Calculation of ACES Tax: Additional Capital Spending

Annual Taxable Production (Bbls)		50,000,000	50,000,000	50,000,000
Initial Expenditure (\$)		\$1,500,000,000	\$1,500,000,000	\$1,500,000,000
Additional Expenditure (\$)	+	250,000,000	250,000,000	250,000,000
Total Lease Expenditure (\$)		\$1,750,000,000	\$1,750,000,000	\$1,750,000,000
WC ANS Price (\$/Bbl)		\$80.00	\$100.00	\$120.00
Tax Value Prior To Additional Expenditure (\$/Bbl)		\$40.00	\$60.00	\$80.00
Additional Capital Spending Per-Barrel of Existing Production (\$/Bbl)	-	5.00	5.00	5.00
Tax Value After Additional Expenditure (\$/Bbl)	=	\$35.00	\$55.00	\$75.00
Taxes Before Additional Expenditure				
Tax Rate (%)		29.0%	37.0%	45.0%
Production Tax Before Credits (\$)		\$580,000,000	\$1,110,000,000	\$1,800,000,000
Capital Credits (20% x Capital Expenditures) (\$)	-	300,000,000	300,000,000	300,000,000
Production Tax After Credits (\$)	=	\$280,000,000	\$810,000,000	\$1,500,000,000
Taxes After Additional Expenditure				
Tax Rate (%)		27.0%	35.0%	43.0%
Production Tax Before Credits (\$)		\$472,500,000	\$962,500,000	\$1,612,500,000
Capital Credits (20% x Capital Expenditures) (\$)	-	350,000,000	350,000,000	350,000,000
Production Tax After Credits (\$)	=	\$122,500,000	\$612,500,000	\$1,262,500,000
Reduction in Taxes From Additional Expenditure				
Before Credits		\$107,500,000	\$147,500,000	\$187,500,000
Additional Credits	+	50,000,000	50,000,000	50,000,000
Total Reduction in Taxes After Credits	=	\$157,500,000	\$197,500,000	\$237,500,000
Reduction in Tax as % of Expenditure		63%	79%	95%
Due to Change in Taxes (Buy Down Effect)		43%	59%	75%
Due to Additional Credits		20%	20%	20%